Caries Prevention: Recommendations for Early Head Start

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Recommended focus of oral health programs in Early Head Start

Develop and implement an oral health program for Early Head Start that is:

- Simple
- Effective
- Low cost
- Sustainable

Essential Components of Oral Health Programs in Early Head Start

1. Assessment
2. Education
3. Preventive interventions
4. Referral

1. Assessment – screening & risk assessment

“Lift the Lip: How to Check Infants’ and Toddlers’ Teeth”

Continuing Dental Education
University of Washington
Seattle, WA

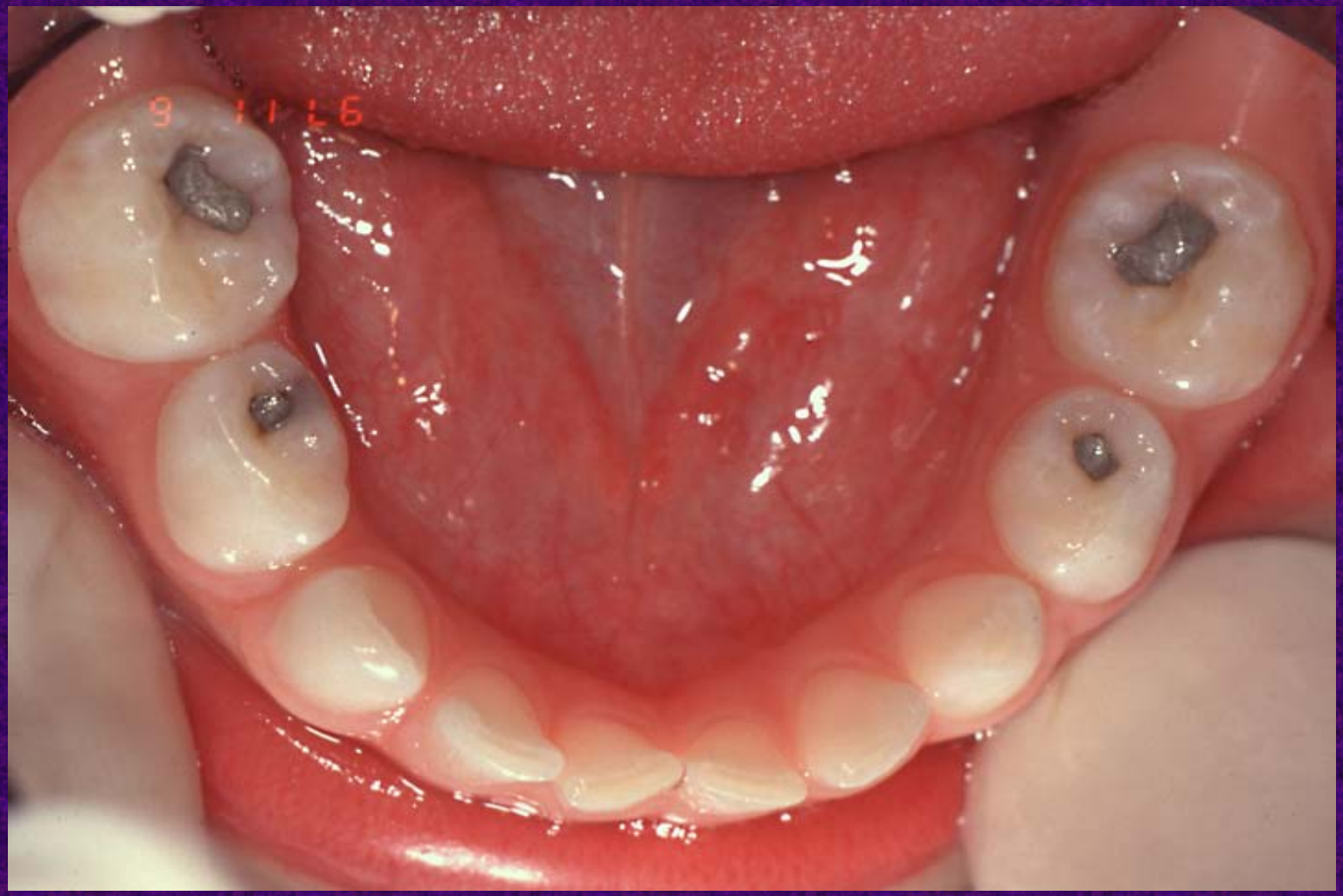
Caries Risk Assessment

- Should be easy to perform, low cost, reliable, and require no special equipment
- Caries risk indicators:
  - Previous caries experience
  - Pre-cavity lesions (white spot lesions)
  - Visible plaque

Previous Caries Experience

- Best and most consistent predictor of future caries
- Finding upon screening include active decay and/or fillings and stainless steel crowns
- Supportive studies:
  - Birkeland et al (1997)
  - Reisine et al (1994)
  - Demers et al (1992)
  - Steiner et al (1992)
  - ter Pelkwijk et al (1990)

Previous Caries Experience



Presence of Pre-Cavity Lesions

White spot lesions

- Precursors to cavitated lesions
- Generally appear on smooth surfaces of teeth
- Consider as equivalent to caries when determining caries risk in young children

Pre-Cavity Lesions

Pre-Cavity Lesions: White Spot Lesions

Often accompanied by bleeding gums

Follows contour of gum-line

Visible Plaque

- An indicator of caries risk in young children
- Alaluusua and Malmivirta (1994)
  - 92 nineteen-month-olds followed for 1 1/2 yrs
  - Visible plaque was best predictor of caries
  - 91% of children were correctly classified as to caries risk based on presence of visible plaque
- Screening for plaque is simple and low cost

Visible Plaque

2. Education Component - keep it simple

- Link between maternal and child health
- Brushing
- Fluoride
- Diet

Education – link between maternal and child health

- Link between maternal *strep mutans* and infant/toddler tooth decay
- Link between maternal periodontal disease and infant birth weight

Education – brushing

- Link between visible plaque and tooth decay in infants and toddlers
- Brush daily X 2 as soon as the first tooth erupts
- Use fluoride toothpaste (1/2 pea size)
- Parents must brush for child
- “Scrub technique” is preferred

Education – role of fluoride

- The main purpose of regular tooth-brushing, in terms of caries prevention, is to introduce fluoride into the mouth regularly via the toothpaste.
- Fluoride toothpaste is essential – use small amount (1/2 of pea size)
- Amount of fluoride in toothpaste
  - Pea-size = 0.25mg fluoride
  - 1/2 pea-size = 0.125 mg fluoride

Schwarz E, Lo ECM, Wong MCM. Prevention of early childhood caries - results of a fluoride toothpaste demonstration trial on Chinese preschool children after three years. J Public Health Dent 1998, 58:12-18.

- 3-6 year olds attending kindergarten in China
- Daily brushing with fluoridated toothpaste
- 36% lower dmfs score after three years
- 28% of untreated decay became arrested
- 45% of untreated anterior decay became arrested

Sjögren K, Birkhed D, Rangmar B. Effect of a modified toothpaste technique on approximal caries in preschool children. Swed Dent J - Supplement 1995, 110:1-10.

- Dispense toothpaste onto brush; spread toothpaste evenly on teeth; brush for two minutes
- Spit no more than necessary
- Only 10 ml water used to rinse before spitting
- Nothing to eat or drink for two hours after brushing

Sjögren K, Birkhed D, Rangmar B. Effect of a modified toothpaste technique on approximal caries in preschool children. Swed Dent J - Supplement 1995, 110:1-10.

- Reduced cavities between the teeth 26% compared to a control group
- Control group also brushed with fluoride toothpaste but received no instructions restricting rinsing

In-Class Brushing…Making it Work. National Head Start Bulletin 1995, 54:10.

- Use disposable cups and place pea-sized amounts of fluoride toothpaste just inside the lip of the cup
- Each child will take his/her own cup and scoop up the toothpaste.
- The cups are then used to rinse at the sink, but can also be used for at-desk brushing

“Modified Toothbrushing Protocol”

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Education – diet

Key concepts:

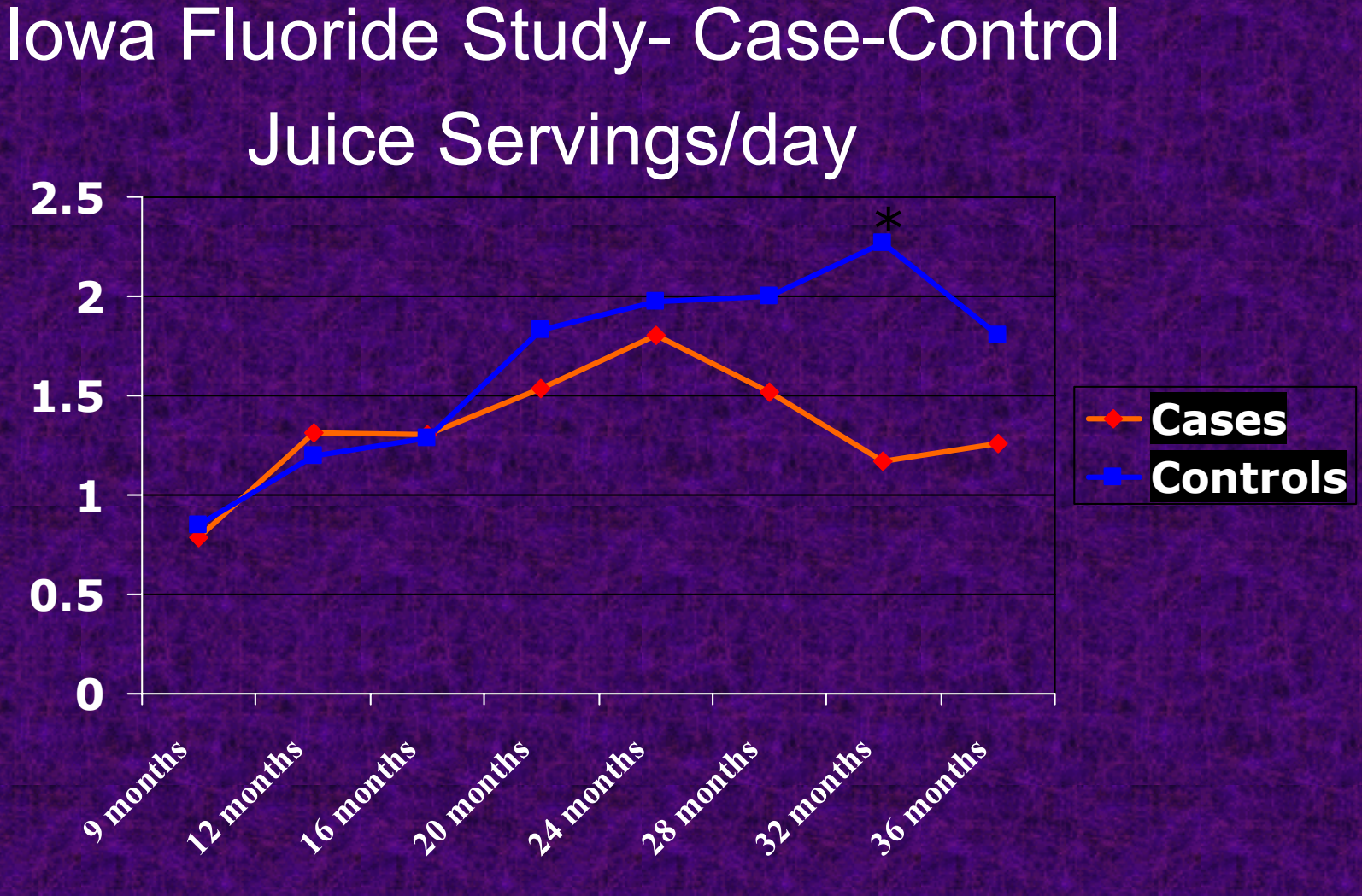
- Limit sweetened beverages
  - Soda pop
  - Kool-aid
- Avoid “propping” bottle – hold infant while feeding
- Monitor bottle use and tippy cup use after teeth are present

Education – diet

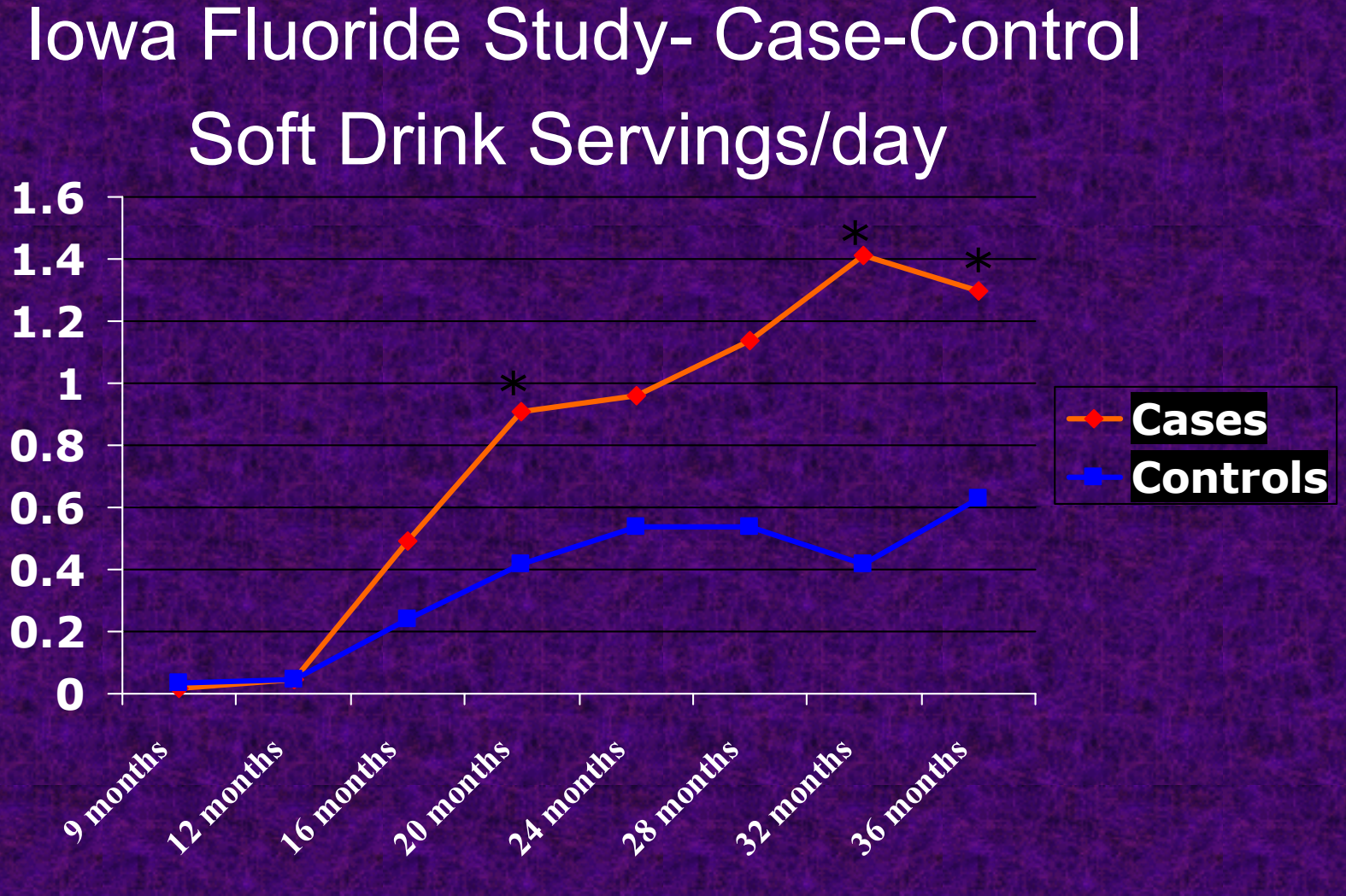
Role of sweetened beverages

- Iowa Fluoride Study Findings
- Dental caries in young children linked to sugared beverage consumption
  - Marshall et al, *Pediatrics*, Sept. 2003
  - Levy et al, *Caries Research*, May/June, 2003

Risk Factors for Dental Caries

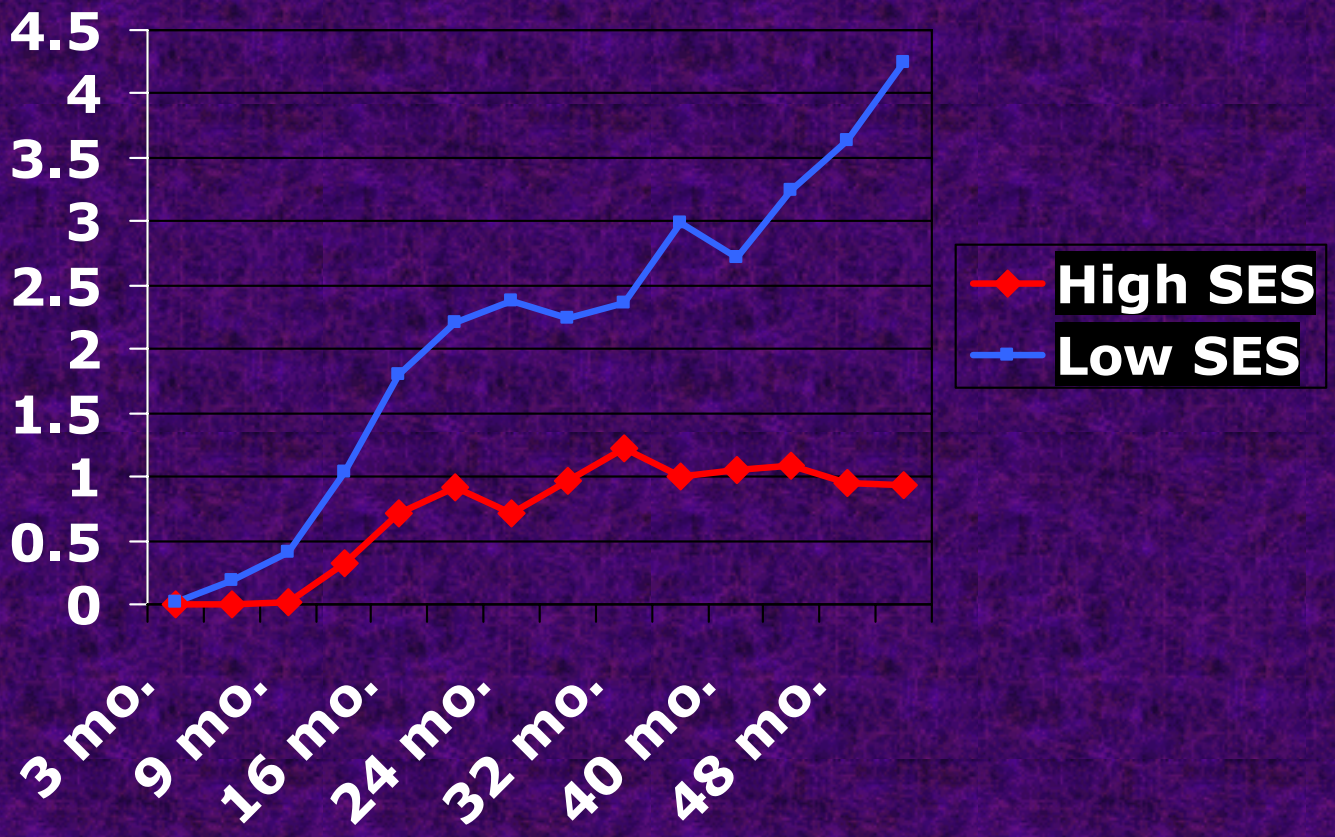


Risk Factors for Dental Caries



Risk Factors for Dental Caries

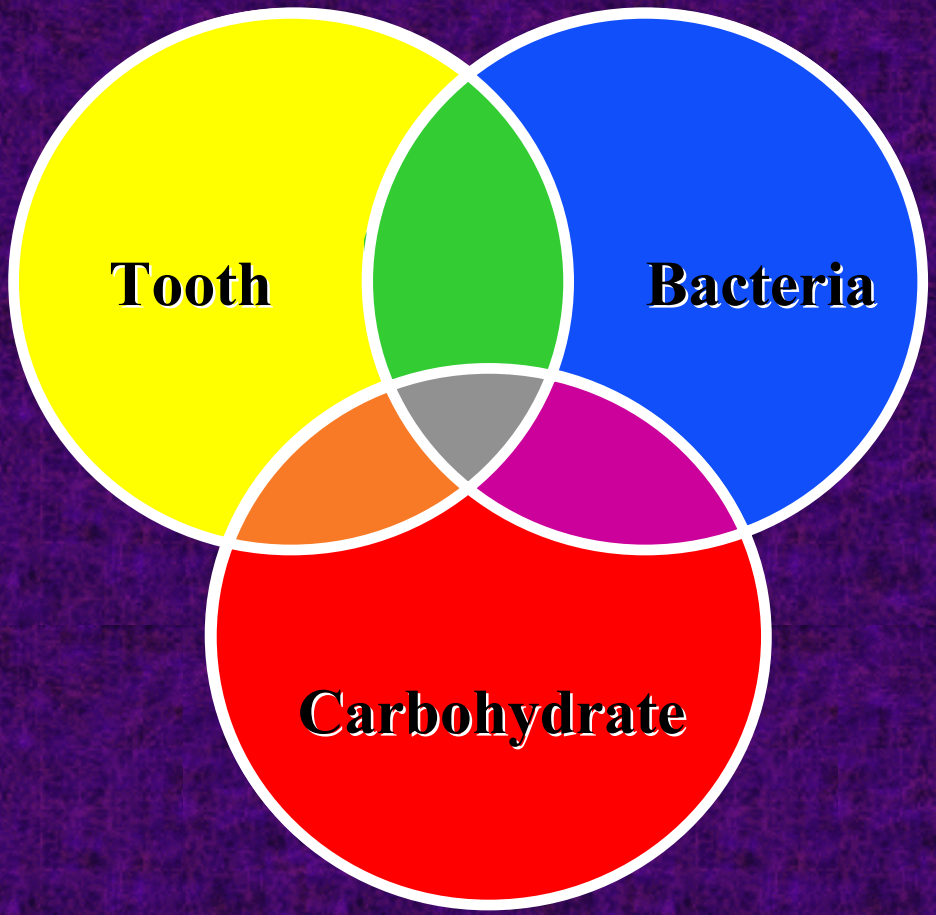
High vs. Low SES – Mean Powdered Drink Consumption (ounces/day)



3. Preventive Program Component

Objectives	Activity / Agent
Reinforce healthy eating habits	Education
Maintain good oral hygiene	Toothbrushing
Frequent exposures to topical fluoride	Fluoride toothpaste
	Fluoride varnish
Delay transmission of SM / suppress SM	CHX

Etiology of Tooth Decay

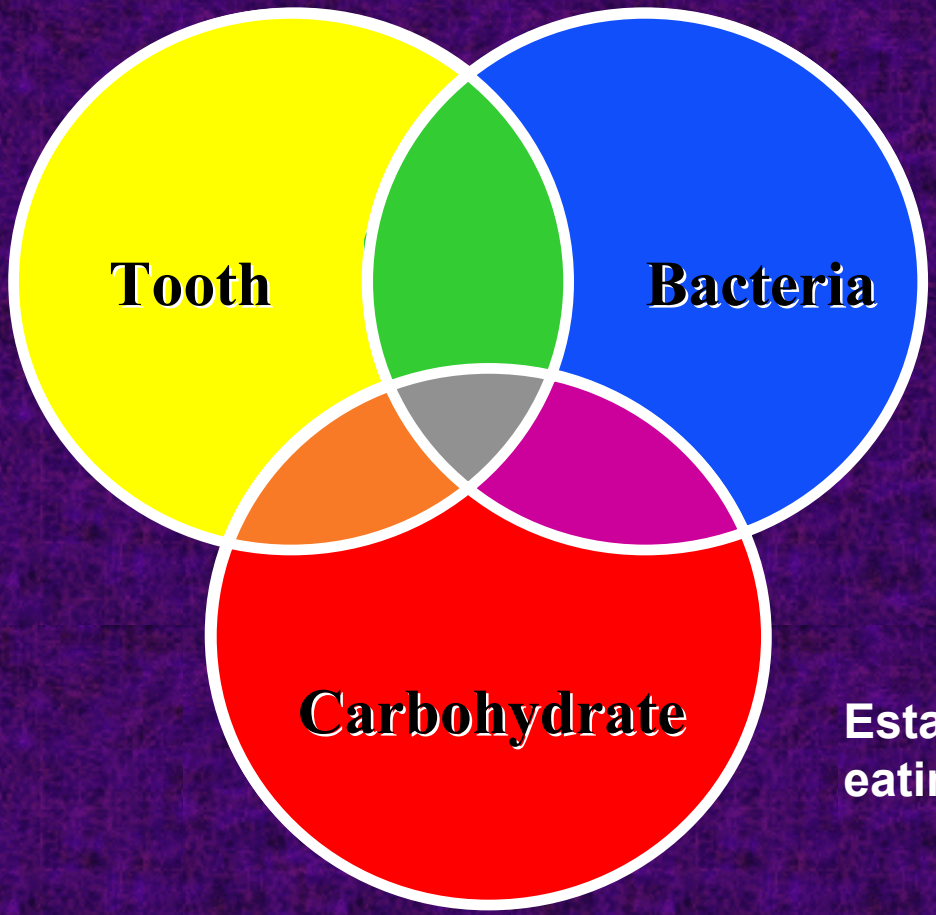


Etiology of Tooth Decay

Delay transmission of SM

Maintain good oral hygiene

Frequent exposure to topical fluoride



Establish healthy eating habits

Fluoride Varnish and Decay Prevention

- Used in Europe for more than 30 years.
- Effective in preventing tooth decay in both the primary and permanent dentition
- Introduced to United States in 1991

Holm AK. Effect of a fluoride varnish (Duraphat) in preschool children. Community Dent Oral Epidemiol 1979, 7:241-5.

- 225 3-year-olds
- Semiannual application of fluoride varnish
- 44% caries reduction after two years

Fluoride Varnish and Decay Prevention

Advantages

- easy to apply
- teeth do not need professional prophylaxis
- children can eat and drink following applications
- potential ingestion of fluoride is low
- prevents caries on both smooth surface and pit and fissure sites

Fluoride varnish application

Fluoride Varnish Application

Recommendations for EHS (empirical)

High Risk = Three applications per year

- caries experience
- white spot lesions
- visible plaque on incisors

Low Risk = Three applications per year

Chlorhexidine and Caries Prevention

Chlorhexidine and Caries Prevention

- *S mutans* is primary pathogen responsible for dental decay
- Chlorhexidine is effective in suppressing *S mutans*
- Chlorhexidine gels and varnishes not yet available in United States
- Chlorhexidine rinse available, but rinses not considered appropriate for preschool-aged children

Gisselsson H, Birkhed D, Bjorn AL. Effect of a 3-year professional flossing program with chlorhexidine gel on approximal caries and cost of treatment in preschool children. Caries Res 1994, 28:394-9.

- 117 preschool children, beginning at age 4
- 1% chlorhexidine gel flossed between teeth, four times a year, for three years
- 38% reduction in approximal caries
- effective, simple, inexpensive, does not require professional dental equipment

Chlorhexidine gel application

Chlorhexidine Gel

Recommendations for EHS (empirical)

High Risk = One application per week

- caries experience
- white spot lesions
- visible plaque on incisors

Low Risk = No indication

Chlorhexidine Gel

NuCara Pharmacy
Shawn Roe – compounding pharmacist
1150 5th St. Suite 140
Coralville, IA
(319) 354-6006
www.nucara.com

60 gm tube (2 oz) = 60 applications
$32.34 plus $2.00 postage

Chlorhexidine Gel

Doctor _____

Address _____

_____

Phone No. _____ DEA No. _____

Name _____ Age _____

Address _____ Date _____

RX 1.0% Chlorhexidine Gel

DISP 2 oz. tube

SIG Brush 1 cc onto teeth for 1 minute. Spit out excess. NPO 30 minutes. Repeat once per week for a total of 10 applications.

_____ D.D.S. / D.M.D.

Print Name _____

Refills _____

4. Referral

- Importance of a “dental home”
- AAPD Guidelines - Age one or within 6 months of eruption of the first tooth
- Iowa - 26% dentists willing to see at age one
- Iowa - 28% of Head Start programs unable to obtain dental exams within 90 days

Dr. Kanellis' Recommendations for Infant/Toddlers Enrolled in Early Head Start

1. Early and periodic oral screenings (EHS)
2. OH instruction (EHS)
3. Dietary counseling (EHS)
4. F varnish application (3X yr.) (EHS / RDH)
5. Toothbrushing 2X daily with F toothpaste (parent)
6. CHX gel application (EHS - RDH) – high risk
7. Age 1 referral to dentist (EHS)
8. SM monitoring (EHS) – when practical

Thank You!

Comments and Questions:

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Thank You!

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